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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,037	11/26/2001	Jeffrey R. Thomas	ITWO:0023	9675

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Ralph A. Graham
Fletcher, Yoder & Van Someren
P.O. Box 692289
Houston, TX 77269-2289

EXAMINER	
IP, SIKYIN	

ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
11/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/995,037	THOMAS ET AL.	
	Examiner	Art Unit	
	Sikyin Ip	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/20/07;2/21/08*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8,47,51-55,57-62,64-87 and 91-94* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8,47,51-55,57-62,64-87 and 91-94* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-6, 8, 47, and 51-55 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 6727483. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed portable induction components such as a power source and coupleable cooling unit are overlapped by portable induction components.

Claims 57-62, 64-87, and 91-94 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 6727483 in view of USP 2359058 to Somes.

Claims 1-30 of USP 6727483 disclose an induction heating system comprising a power source and cooling unit except for flow switch. Somes teaches flow switch that deenergized (shut off) induction heating coil when said coil is not properly cooled (page

3, left-col. lines 40-57) in the same field of endeavor. Therefore, using flow switch in induction heating system to insure the induction coil is properly cooled is contemplated within ambit of ordinary skill artisan.

Claims 1-6, 8, 47, 51-55, 57-62, 64-87, and 91-94 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-28 of U.S. Patent No. 7015439. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claimed portable induction components such as a power source, programmable controller (instant claims 1 and 47), and a temperature feedback device (instant claims 51-54) are overlapped by portable induction components (USP 7015439, claim 1, for example).

Claim Rejections - 35 USC § 103

The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6, 8, 47, 51-55, 57-62, 64-87, and 91-94 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 3403240 to Henderson in view of USP 5430274 to

Couffet et al, USP 4058696 to Antier et al, and further teaching of USP 5198053 to Duncan.

The Henderson in figures 1-4 and col. 2, line 23 - col 4, line 33 discloses the features including the claimed portable induction unit with cooling. Cooling water is supplied to induction heating element (22) (col. 3, lines 65-71 and Figure 8 and paragraph bridging col. 2-3). Henderson discloses cooling water supply is controlled by a solenoid which is actuated by power supply motor-generator set. The solenoid (122), control box (131), and check valve (128) read on/function as the claimed "flow switch" (col. 3, lines 57-75). All have same function to control induction heating element temperature. Henderson does not disclose cooling fluid through the fluid-cooled induction heating cable, a portable power inverter, and programmable power source controller. Couffet discloses cooling tube in the induction conductor to prevent parasitic heating (col. 1, lines 14-59). Antier in col. 2, lines 5-44 discloses a portable power inverter which has benefit as set forth in col. 2, lines 5-11. Duncan in col. 7, lines 24-62 that using Lebtech Notebook Proportional-Integral-Derivative (PID) algorithm or any other control program with personal computer to control induction unit to produce time-temperature curve is commercially available. Programming power controlled unit is well known in the induction art for various heating. Therefore, it is contemplated within ambit of ordinary skill artisan to automate a manual control device of Henderson when technology is available to improve product quality. With respect to steps such pre-heating, post-heating, and stress relieve heating which can be done by induction heating system of Henderson. Moreover, it is well settled that a claim drawn to

apparatus must distinguish over prior art in terms of structure. Ex parte Forsyth and Hancher, 151 USPQ 55, 55.

Recycle cooling fluid is contemplated within ambit of ordinary skill artisan especially for a portable induction system of Henderson when fresh cooling fluid is not immediately available.

Claims 57-62, 64-87, and 91-94 are further rejected under 35 U.S.C. 103(a) as being unpatentable over references as applied to claims above, and further in view of USP 2359058 to Somes.

The above references disclose the features substantially as claimed as set forth in the rejection above except for flow switch that detects coolant from induction heating coil. However, Somes teaches flow switch that deenergized (shut off) induction heating coil when said coil is not properly cooled (page 3, left-col. lines 40-57) in the same field of endeavor. Therefore, it would have been obvious to one having ordinary skill in the art of the cited references at the time the invention was made to provide flow switches that detect coolant and temperature of induction heating coil as taught by Somes in order to provide proper cooling. In re Venner, 120 USPQ 193 (CCPA 1958), In re LaVerne, et al., 108 USPQ 335, and In re Aller, et al., 105 USPQ 233.

Claims 79-87 and 91-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over references as applied to claims above, and further in view of USP 5874713 to Cydzik et al.

The above said references disclose the features substantially as claimed as set forth in the rejections above except for recycling a cooling fluid. However, Cydzik in paragraph bridging col. 6 and 7 teaches recirculating fluids for cooling a coil in the same field of endeavor or the analogous metallurgical art. Therefore, it would have been

obvious to one having ordinary skill in the art of the cited references at the time the invention was made to recirculate cooling fluid like car radiator when fresh cooling fluid is not immediately available. In re Venner, 120 USPQ 193 (CCPA 1958), In re LaVerne, et al., 108 USPQ 335, and In re Aller, et al., 105 USPQ 233

Response to Arguments

Applicant's arguments filed November 20, 2007 have been fully considered but they are not persuasive.

Applicants' statement in page 13, "Incomplete Action" is noted. But, it is an inadvertently mistake that claims 87 and 91-94 have not been listed with claims 57-62 and 64-86 which also recite "flow switch" as claims 87 and 91-94.

~~Particularly,~~ the Office Action merely states that the present claims are not patentably distinct from the claims of the '483 and '439 patents "because the claimed portable induction components are overlapped by portable induction components"

Applicants argue that " " But, as stated in In re Peterson, 315 F.3d 1325, 1329-30, 65 USPQ2d 1379, 1382 (Fed. Cir. 2003), that "A prima facie case of obviousness typically exists when the ranges of a claimed composition (here apparatus components) overlap the ranges disclosed in the prior art".

~~Applicants respectfully~~ assert that the present claims recite elements (including, for example, "a *single continuous cooling path* operable to dissipate heat from the fluid-cooled induction heating cable *and* from an electrical lead extending from the portable induction heating system to the fluid-cooled induction heating cable," and "a flow switch ... configured to detect the cooling fluid received from the fluid-cooled induction heating cable and to effect discontinuation of the output power when the amount of the cooling fluid received from the fluid-cooled induction heating cable is below a threshold amount") that would not be obvious in view of the other claims noted by the Examiner.

Applicants " " First, there is no written description in the specification as originally filed to define the structure of "a

single continuous cooling path". In view of instant Figure 4, elements fluid control unit (74), cooling fluid (104), and output block (106) are merely read on circulate cooling fluid (see Figure 4 below).

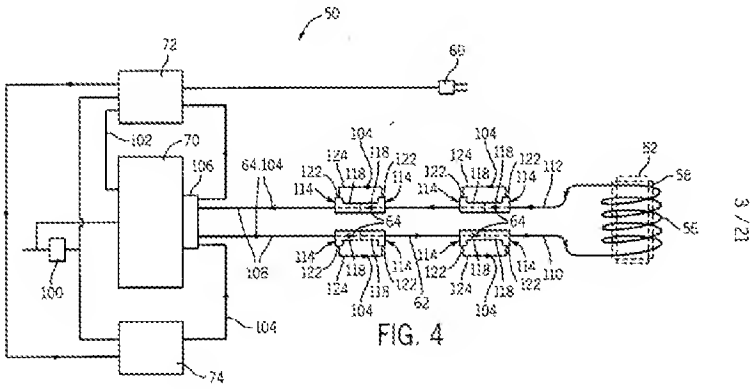

FIG. 4

In USP '483, claim 22, for example, that "a cooling unit to circulate cooling fluid through the induction heating system" is clearly recited.

22. An induction heating system, comprising:
a power source;
a cooling unit operable to circulate cooling fluid through the induction heating system,
a flexible fluid-cooled induction heating cable, comprising:
...

" Said USP '483 does not disclose "flow switch" but instant rejected claims 1-6, 8, 47, and 51-55 do not recite "flow switch". Nonetheless since circulating cooling fluid is used to cool induction heating system of USP '483, obviously there is flow switch to control the cooling fluid. Somes is added to teach flow switch (page 3, left-col. lines 40-57) which would deenergize induction heating coil when said coil is not properly cooled.

~~23, 2007, pages 2-3 (error in original). As discussed below,~~ although the Somes reference discloses flow responsive devices 14 and 17, neither of these devices can be reasonably equated with the flow switch recited by the instant claims. ~~Consequently, for~~

Applicants argue that "

But, instant specification as originally filed does not disclose/define the structure or function of recited flow switch which is different from conventional flow switch. Therefore, the recited "flow switch" is mere conventional and perform functions as a conventional "flow switch".

Applicants argument in paragraph bridging pages 16-17 of instant remarks is noted. But, water supply (Figure 2, elements 26, 28) is clearly disclosed. With respect to the "a single continuous cooling path" that there is no written description in the specification as originally filed to define the structure of "a single continuous cooling path". In view of instant Figure 4, elements fluid control unit (74), cooling fluid (104), and output block (106) are merely read on circulate cooling fluid (see Figure 4 below).

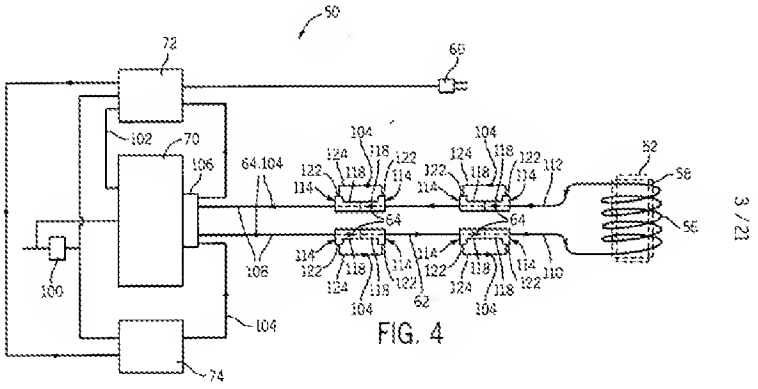

FIG. 4

Applicants' argument in paragraph bridging pages 17-18 of instant remarks is noted. But, applicants fail to show that "first cooling pathway" (16, 18) is not fluidly

connected to “second cooling pathway” (12 and 14) as “a single continuous cooling path”.

Applicants argue that “ There is no disclosure, suggestion, or even hint in the cited reference that the solenoid 122 or control box 131 somehow "detect cooling fluid," as recited in the present claims. ~~In fact, as described in the cited reference, one skilled in the art would understand~~ ”

57. (currently amended) A portable induction heating system, comprising in a portable unit:

:

a flow switch coupled to the programmable controller, wherein the flow switch is configured to detect the cooling fluid returning from the fluid-cooled induction heating cable and to effect ~~a change in~~ discontinuation of the output power when the amount of the cooling fluid returning from the fluid-cooled induction heating cable is below a threshold amount.

But, , the recited “flow switch” turns off output power when coolant fluid is low which function similar to teaching of Henderson as recognized by applicants in instant remarks (pasted below).

Id. In other words, the solenoid 122, via the control box 131, simply opens the valve 120 when power is applied to the heating element 22, and closes the valve 120 when power is not being applied to the heating element 22. Valve (120 turns power to heating element (22) off if no (low) coolant is circulating. Valve (120 turns power to heating element (22) on if detectable coolant is circulating.

Applicants’ argument in pages 22-23 of instant remarks is noted. But, “valve” or “flow switch” in Henderson and Somes, respectively, functions to turn power of induction heating element on/off by responding to coolant according to design/program which read on claimed limitation.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore provide a concise explanation and support with page and line number in the specification for any amendments made to the disclosure. See 37 C.F.R. Part §41.37 (c)(1)(v).

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (571) 272-1241. The examiner can normally be reached on Monday to Thursday from 5:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (571)-272-1244.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Sikyin Ip/
Primary Examiner, Art Unit 1793

October 7, 2008